BLACK HILLS SUBREGION

MULTIPLE USE LAND MANAGEMENT GUIDE

1960 - 1970

CENTRAL ROCKY MOUNTAIN AND GREAT PLAINS REGION

FOREWORD

This Subregional Plan for Multiple Use Management will serve as a guide in the development of National Forest and Land Utilization Area Block and Unit Multiple Use Land Management Plans. It was developed by a committee representing the levels of District Ranger, Forest Staff Assistant and Forest Supervisor and reviewed by the Regional Forester and his staff.

In the future lands under the administration of the Forest Service must supply more goods and services than they now do if we are to meet our objective of furnishing optimum total benefits to the public for the greatest good. This dictates that a thorough analysis and study of land management problems and opportunities be made and multiple use land management plans be developed to properly direct the management of resources and uses.

It is intended that under this guide the more specific plans will serve in particular to:

1. Direct administration in a manner to harmonize multiple resource management.
2. Provide over the long range for highest use of land for the greatest good to the total public.
3. Provide integration and implementation in managing resources and uses.
4. Provide for continuity in management direction.
5. Provide a vehicle for orientation of new administrators.
6. Obtain a better average of sound decisions by both new and old administrators.
7. Provide a base for conducting General Integrating and General Functional Inspections.
8. Provide a basis for consulting with and informing people on Forest Service management policies.

8/17/59
(Date)

Donald E. Clark
Regional Forester

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I. PLANNING PERIOD

The estimated useful life of this plan is 10 years - - 1960 through 1969. A review for minor revisions should be made about 1964 and a major reanalysis should be made in 1970.

II. MANAGEMENT SITUATION

The area to which this subregion guide is directed includes all Black Hills National Forest lands in South Dakota and Wyoming and the Land Utilization Projects in southwestern and central South Dakota. The gross planning area encompasses the area as shown on the map in the appendix. While this guide covers only N.F. and L.U. lands, the resource and economic developments on the outside lands (as shown) must be considered in evaluating impacts and planning use of N.F. and L.U. lands. There are 1,217,892 acres of national forest lands and 726,395 acres of Land Utilization Projects in the subregion. Elevations range from 1,800 feet on the plains to a maximum of 7,240 feet at Harney Peak in the Hills.

The Black Hills constitute the only area of compact, mountainous terrain in the western great plains and are entirely surrounded by flat, treeless prairies. Because of their insular nature, the Hills project their influence far beyond their immediate environment.

The average frost-free period varies from less than 90 days at the higher elevations in the Hills to 150 days on the plains. Two distinct climatological areas characterize the subregion. The plains portion is characterized as typically prairies and arid. The summers are short and hot, and the winters long and cold. Time of precipitation varies and long periods of drought may be expected. The Black Hills and adjacent mountain area have timbered slopes and protected valleys with higher precipitation, wind protection, winter snow cover, and permanent streams. The mountains influence the weather for a considerable distance into the plains.

The average annual precipitation in the Hills varies from about 17 inches in the southern hills to 28 inches in the northern hills with 57 - 69% of the precipitation occurring from May 15 to September 25 - February being the driest month. The surrounding plains average about 14 inches annually with annual distribution of rainfall following the same pattern as that in the Hills. Winter precipitation on the plains is mostly snow, but because of gusty winds, large areas are blown free of snow and sizeable drifts accumulate in road cuts and protected gullies. Average annual temperatures in the Hills range from 41° at Custer to 49° at Hot Springs with extremes ranging from -40° to 100° F.

For planning purposes, statistical data for South Dakota can be applied to the Black Hills subregion as a whole. Fourteen percent of the net national forest lands is in Wyoming. The Wyoming portion of the subregion is a sparsely settled region with main centers of population at Newcastle (population 4,000) and Sundance (population 1,000).

The 1950 census showed the Black Hills subregion contained approximately 11% of the total South Dakota population. In 1956 the estimate was 12%. Projections indicate the percentages will be 12 and 13 by 1960 and 1965 respectively. Projections to 1965 are made on the assumption that the increase will continue at the same rate as from 1930 to 1956. By 1960 the estimated Black Hills population will be 88,000 and by 1965 96,000. Major changes in the rural-urban population distribution have characterized the Black Hills subregion since 1930. In 1930, 33% of the residents lived on farms or ranches. This percentage dropped to 23% by 1940 and to 14% by 1950. The relative decline of farm and ranch population in the Black Hills from 1930 to 1950 was nearly twice that for the State as a whole.

From 1947 to 1954 there has been a 37% increase in the number of manufacturing establishments in the Black Hills. This increase is about three times greater than that for the State. However, the increase has been largely due to an increase in the number of small establishments employing relatively few people and serving a local market. From all indications the outlook for industrial expansion is good. The natural geographic location of the subregion in close proximity to lumber, mineral, and agricultural resources is excellent. The Black Hills are remote from important markets, but the region has the resources and facilities to attract industries to serve the existing local markets with possibilities of expansion in the future. The economy of Black Hills subregion is the most diversified of the economic regions in the State. In addition to the types of industries in the other parts of the State, the Black Hills has the mineral, timber, and tourist industries as valuable parts of its economy. Much progress has been made toward increasing the industrialization of the subregion and continued expansion can be expected. The area can look toward an expansion of business activity that will play an increasingly important part in the State's economy.

The soils of the Black Hills portion of the subregion are, for the most part, mountain soils that do not occur as large uniform areas but in an exceedingly complex pattern. Soils range from very sandy textures to sandy loams at higher elevations to loam, clay loam, and clay textures at lower elevations. With the exception of foothills soils, the soils are generally of low erodibility.

On the Land Utilization Project, the soils are predominantly of clay textures and are derived from Pierre shale or other clayey shales. Soil textures and permeability are dependent upon the relative amounts of sandstone or limestone mixed with materials derived from shale in the parent materials. These soils are susceptible to wind and water erosion.

The Black Hills subregion lies entirely within the Missouri River Basin. The Belle Fourche and Cheyenne Rivers, the two main tributaries, encircle the Hills. The Land Utilization Projects drain into the Bad, White, and Cheyenne Rivers as well as directly into the Missouri.

Live streams in the Hills are used for municipal and rural supplies, irrigation, trout fisheries, on-site recreation, industry, and to a limited extent to produce hydro-electric power. The Belle Fourche, Rapid Valley, and Angostura projects are the three main Bureau of Reclamation irrigation projects. The Rapid Valley Project is entirely dependent on water originating within the forest boundaries.

Water resources are reasonably adequate or can be developed to meet present use but demands of increasing population, industry, and the expanding Ellsworth and Rushmore Air Force Bases will quite likely develop shortages in the future. As an example of increased water use, Homestake Mining Company's withdrawals from Spearfish Creek increased from 3,308 acre feet in 1953 to 6,440 acre feet in 1958 -- almost a 100% increase in a 5 year period.

365 6,440

Located within the forest boundaries and intermingled with public lands are 307,132 acres of State and private lands. These alienated lands represent 20% of the national forest gross area. Thousands of acres of stringer bottoms have passed to private ownership through Homestead and Mineral entries. Administration and management are more than normally complicated by the "shotgun" pattern of land ownership, by thousands of unpatented mining claims, and by 3,750 miles of public land boundaries most of which are inadequately posted. There are 854,743 acres of alienated lands in a checkerboard pattern within the Land Utilization Project boundaries. These lands represent 54% of the Land Utilization gross area. Administration and management of the Project, as in the Hills, are complicated by the intermingled private and public lands.

Effective management of public lands requires reasonable consolidation of ownership where there are intermixed public and private lands. Those tracts of lands that serve to complement good over-all land management should remain in private ownership. However, there are tracts of alienated lands which, by their location and use, should be under public administration. Likewise, there are public lands that more properly should be in private ownership.

Currently, there are 1,170 special use permits on national forest lands and 109 permits on the Land Utilization projects. Because of the interrelationships of land uses and private lands, the pattern of land ownership in the subregion compounds the difficulties and complexities of special land use administration. Indications are that demands for special use permits will increase.

The subregion is served by U.S. Highway 212, 14-16 and 18 running east and west and U.S. Highways 85 and 385 running north and south. Interstate Highway 14, because of its proximity to the forest, will contribute greatly to increased use of the subregion. A network of secondary State highways, county roads, and forest development roads provides access to all parts of the subregion. Improvement of transportation developments, particularly forest highways and forest development roads, is needed to keep pace with resource developments.

The Chicago-Northwestern, Chicago-Burlington and Quincy, and the Milwaukee railroads plus three airlines serve the principal cities within the subregion. Indications are that air travel will become increasingly important to the area.

The Black Hills portion of the subregion is susceptible to periodic occurrence of disastrous forest fires. Over the years, many large fires have occurred and the burns have been so severe in many instances that reforestation has been a serious problem. Because of more intensive protection over the past 25 years, there has been a substantial increase in acreage of dense timber reproduction. The crowning hazard in these young stands means that larger acreages of more destructive burns may be expected in contrast with the slower surface fires in light scattered understories which were characteristic of the fires in earlier years. Fire risks and hazards are also increasing because of changes in local populations, increased use of the forest resources, and the influx of recreation users. The annual average fire occurrence on national forest land in the subregion is about 160. The number of man-caused fires has fluctuated each year. In 1958, despite stepped-up fire prevention efforts, they accounted for 30% of all fires. Statistics show that more mancaused fires can be expected in the spring and fall months.

The harvest of ponderosa pine is an important part of the economic base of the subregion. On the national forest it produces by far the largest revenue from any resource. Timber, along with being of economic importance, is also extremely valuable because of its benefits for watershed, wildlife, scenic, and recreational purposes. On national-forest land there are 623,000 acres of operable commercial sawtimber stands and 228,000 acres of pole stands. Stands of reproduction size cover an additional 205,000 acres. The present allowable cut for sawtimber is 60 million board feet and 41 million board feet for timber products less than sawtimber size. The actual cut of posts, poles, and pulpwood has been gradually increasing each year but still remains far below the allowable cut. Sawtimber cuts have fluctuated each year because of changing lumber markets. The estimated cut of sawtimber for F.Y. 1959 is 63 million board feet or 105% of the allowable cut. Present allowable cuts, particularly in the smaller size classes, can be increased by

intensive management practices. The annual cut of these small products can be materially increased by the development of a pulpwood market. Activity and interest in pulpwood during the last few years indicate that expanding development in this field can be expected in a relatively short time.

According to estimates, approximately 29,000 acres of denuded lands suitable for timber production still remain to be planted. Timber stand improvements are needed on approximately 500,000 to 600,000 acres. Total acreage thinned each year has been steadily increasing but thinning and other improvement practices must be stepped up to place timbered areas in full sawtimber production to help meet the nation's estimated future timber needs.

Serious insect infestations in timber stands are a phenomena of the area and are a management phase which must be fully provided for.

The national forest furnishes 97,000 cow months and 34,000 sheep months of livestock grazing on 416,000 usable acres. Land Utilization lands furnish 248,000 cow months and 44,000 sheep months on 698,000 usable acres. While the forest L.U. project contributions to South Dakota's livestock feed requirements are relatively small, this range is vital to many year-round ranch operations. While on some areas there has been notable improvement in range and watershed conditions, overgrazing still exists on parts of the forest and Land Utilization Projects.

Approximately 45% of the big game hunting (including antelope) and 5 to 10% of the small game hunting in South Dakota are provided by the hills part of the subregion and the surrounding foothills area. Sixty-five percent of the State's deer hunting and, at the present time, practically all of the wild turkey hunting, is in the Hills. Almost all of the State's cold water fishing is on the national forest. While the hunting provided by the Wyoming part of the subregion is relatively minor compared to Wyoming as a whole, the area is an important hunting region in the northeastern part of that State. As a hunting guide is not required in that part of Wyoming, the area attracts many non-resident hunters. The Land Utilization projects provide a relatively small percentage of South Dakota's hunting and fishing.

There are estimated to be 81,000 head of deer, 350 mountain goats, 150 antelope, and 400 elk within the forest boundaries. The Land Utilization Projects provide range for an undetermined number of deer and approximately 1,100 antelope. National forest fishing water is provided by 300 miles of streams and there will be 1,850 acres of lakes when Pactola Lake is filled. The subregion is generally overstocked with beaver and populations have increased beyond their limited, suitable habitat. However, it should be pointed out that in a good many places

overgrazing by livestock and big game along streams has damaged the habitat for beaver.

Hunting and fishing demand is ample to control and harvest big game and fish numbers of proper manipulation of length, time, and type of season, but many key winter game ranges still remain overpopulated with game. Mountain goats are not classified as game animals in South Dakota and, therefore, cannot be controlled by hunting. Working relations with the South Dakota and Wyoming game and fish departments, Fish and Wildlife Service, and sportsman organizations are currently satisfactory.

Recreation use on the Black Hills National Forest (excluding highways and roads) totaled 2.1 million man days in 1958. This represents about 20% of the total recreation use in Region 2 and 2.5% of the total national forest recreation use in the United States. During 1958, the Black Hills ranked as the 8th most heavily used national forest in the nation from the standpoint of man days' use and 6th from the standpoint of total number of visits. The Hills area has become an ideal recreation spot for not only the local population but also for people living in surrounding States. Several local attractions including Mt. Rushmore National Memorial, Wind Cave National Park, Jewel Cave National Monument, Custer State Park, historical points of interest, etc., have all served to make the Black Hills an important vacation objective of thousands of people annually. The area is also a favorite stopover spot for many tourists whose destinations are Yellowstone and Glacier National Parks, the Pacific States, or Canada. Recreation pressure will continue to pyramid here as local and national populations continue to increase. Recreation improvements are inadequate to meet present demands. The present level of recreation financing will have to be materially increased to meet not only the expected demand but current needs as well.

The Black Hills is an extensively mineralized area and its mineral industries occupy a vital position in the economy of the subregion and the State. The Homestake Mine, the largest gold mine in the United States, is located near Lead. This mine has contributed over 90% of the total South Dakota gold production since 1920 and contributes significantly to the area's economy. Future mining developments may overshadow present mining and processing activities. This will occur as new discoveries of mineral deposits are made and new technological methods are developed to more profitably process the types of ore available. There is every indication that the economic importance of this basic industry of the subregion will continue to expand.

Recent mineral activity has included the discovery and development of uranium ores in the Pilger Mt. area of the Fall River Ranger District and in the area west of the Bearlodge mountains. Uranium ore is produced in significant quantities and substantial reserves have been developed. Other activity has centered around iron ore deposits in the Nemo area. Development of these ores, if feasible, will have significant impacts on the forest's resources because of the strip mining that will be involved.

Most of the mining activity in the subregion has occurred on claims filed on the public domain. The patchwork and network of patented and unpatented mining claims in the Black Hills complicate land administration. The problems and use impacts from the mining industry will continue to increase.

SUMMARY OF THE MANAGEMENT SITUATION IN RELATION TO RESOURCES, USES, AND FUNCTIONS

The intensive use and growing pressures from the public have a profound effect on national forest and Land Utilization resources. It is equally apparent that the growing demand for products and services from these lands will require closely correlated functional planning. Management direction must be formulated to harmonize the competing demands in multiple use of the land and point the way to increased production.

The basic resources are soil, water, and vegetation; all have multiple use potential. Soil (or land) is used to produce crops, to provide occupancy sites, and as a water reservoir. Under the multiple use concept, timber, forage, food crops, and soil protection are the fundamental functions of vegetation. Water's contribution, in addition to being an essential factor in the production of wild land crops, is in fulfilling the needs of domestic, irrigation, power, and recreation purposes.

In view of the prevailing management situation, it is the intent of this plan to provide direction for the basic resources (soil, water, and vegetation) and their interrelated uses. Following these basic management directions are more specific directions for the management zones.

III. GENERAL MANAGEMENT DIRECTION

Set forth in this section are management directions, by resources and uses, that are common to all management zones in the subregion. (Management Zones are explained in the next chapter.) This is done to avoid repeating these directions in each zone. Thus the management direction set forth later for each zone applies to that zone and no other.

In the management of any resource or use, it is necessary that:

(1) Soil be considered the basic resource with which we are dealing and that it is the medium supporting or influencing other resources. This will be an overriding consideration.

(2) Close working relationships will be maintained with agencies, organizations or individuals concerned with the management and protection of that particular resource or use. Examples are: cooperation with health departments is essential in developing public use areas and with game and fish departments in the management of game and fish.

(3) As research findings become available, resource management will be adjusted and developed to make use of the data.

SOIL

THE BASIC MANAGEMENT DIRECTION IS TO KEEP SOIL IN PLACE AND TO IMPROVE ITS QUALITY FOR PRODUCTION OF VEGETATION AND OPTIMUM STORAGE OF WATER.

1. Management practices that will improve soil conditions and prevent erosion will be given preference.

2. Erosion which has or will result from resource use, fire, construction or maintenance of improvements, will be corrected as promptly as circumstances permit.

3. Where possible, soil investigations will be made in advance of resource project planning where there is uncertainty as to soil suitability and capability.

4. Priority of management direction will be resolved within the requirements of good soil management. In the final analysis, the texture, morphology, properties, etc., of the soil will be the determinant factors in assigning dominant management objectives.

Subordinate people's draft!

WATER

MANAGEMENT WILL PROVIDE FOR THE OPTIMUM YIELD AND DELIVERY OF USABLE WATER IN STABLE STREAM FLOW OR SUBSURFACE SUPPLY.

1. Management practices that will give optimum yield of usable water will be given preference.

2. Initiate water developments or cooperate in their development by others for on-site use, consistent with State Law and when the public will benefit through increased use of the sub-region's resources.

LANDS

MANAGEMENT WILL BE AIMED AT PROPER LAND USE ON A COORDINATED BASIS.

1. Boundary adjustments and land exchanges will be used to consolidate ownership. Emphasis will be placed on acquiring, for national forest and Land Utilization Project purposes, lands with high multiple use value and disposing of lands better suited to private ownership.

2. Lands having high public value or lands that provide valuable public access will not ordinarily be exchanged.

3. All existing and proposed administrative and public service sites will be protected through the use of existing executive orders or other authorizations.

4. High priority will be given to survey and posting of interior and exterior public land boundaries and boundaries of lands withdrawn from mineral entry.

5. With rare exceptions, public lands adjoining town sites, private lands, and other especially classified lands, jurisdictions, and ownerships, management policy and direction will recognize the need for harmonizing and in some cases implementing adjoining property values.

SPECIAL LAND USES

MANAGEMENT WILL BE DIRECTED TOWARD LIMITING SPECIAL LAND USES TO THOSE OF PUBLIC VALUE OR WHICH ARE IN THE INTEREST OF LOGICAL AND PRACTICAL MANAGEMENT OF CERTAIN TRACT OF FEDERAL LANDS.

1. Special land uses not now compatible with management priorities will be placed on equitable tenure for eventual elimination.

2. Roads or trails located and constructed by permittees or others shall tie in with Forest Service transportation planning.

TRANSPORTATION

GIVE HIGH PRIORITY TO TRANSPORTATION SYSTEM DEVELOPMENT TO FULLY UTILIZE THE SUBREGION'S RESOURCES.

1. Keep the transportation system in coordination with resource development and administration.

2. In developing the transportation system, give optimum protection to aesthetic features and capitalize on potential as well as existing forest values.

3. Construction and maintenance projects will provide for prompt soil stabilization through design, revegetation or other means.

4. Take advantage of all opportunities to obtain permanent rights-of-way.

5. Locate transportation routes to conform with good land management practices.

FIRE

FIRE CONTROL TECHNIQUES AND PROCEDURES WILL KEEP ABREAST OF INCREASING DEMANDS ON FOREST RESOURCES.

1. Analyze fire problems with particular attention to prevention, fuel treatment, State and private land problems, and cooperative relationships with other land management agencies and miliary installations.

2. Hold fire losses to a minimum through aggressive action on every fire - analyze action taken.

3. Through good management practices, reduce the opportunities for wild fires to start and improve the opportunities for their control.

TIMBER

COMMERCIAL TIMBER LANDS WILL BE MANAGED FOR OPTIMUM PRODUCTION THROUGH APPLICATION OF PROPER MANAGEMENT TECHNIQUES.

How does this relate to water & wildlife

(Management Directions for Timber are contained in directions under the Hills Management Zone.)

See p. 18

RANGE

USABLE RANGE WILL BE USED FOR GRAZING LIVESTOCK, WITHIN THE LIMIT OF THE CARRYING CAPACITY.

1. Bring usable ranges to optimum forage production by sound management and improvement practices.

2. Analyze ranges, prepare action and management plans for grazing allotments and maintain currently.

3. Limit livestock use to usable ranges and during the proper grazing season.

4. Balance livestock numbers with range capacities.

5. Livestock use on critical deer winter ranges will be tempered as is necessary to provide forage for desirable numbers of game animals.

WILDLIFE

WILDLIFE HABITAT WILL BE MANAGED TO PROVIDE OPTIMUM FOOD COVER AND WATER FOR GAME AND FISH. THROUGH COOPERATION AND COORDINATION REGULATE AND MANAGE GAME AND FISH ON A SUSTAINED BASIS.

See p. 18

Can you do this in beaver dykes needs?

1. Habitat needs of wildlife will be considered when planning and developing other uses and activities.

2. Importance of beaver management is recognize and a program of management will be initiated.

3. Work with State officials to have mountain goats and Bighorn sheep classified as game animals in South Dakota to facilitate control by hunting. This will require legislative action.

4. Introduction of game animals and birds will be in accordance with wildlife plans and policies and transplants will be confined to suitable habitats.

5. Needs for game and domestic stock will be harmonized.

6. Continue wildlife habitat studies and programs to determine game range capacities and need for game and bird harvests.

7. Direct efforts toward improving and increasing fishable waters.

8. Review and clarify provisions of the cooperative agreement with the Fish & Wildlife Service in regard to signing and placement of cyanide guns and poison bait stations.

RECREATION

MANAGEMENT WILL BE AIMED TOWARD ADEQUATELY PROVIDING FOR THE VARIOUS CLASSES OR FORMS OF RECREATION TO MEET THE DEMANDS - TO THE EXTENT SUCH IS IN THE BEST INTEREST OF THE PUBLIC.

1. Recreation facility development will be located primarily in the Travel and Water Influence Zones. However, hunting camps and minor recreation facilities will be permitted outside these zones.

2. Aesthetic values will be considered in the management of all resources, occupancy, and use including the locations of roads and highways.

3. Commercial, occupancy, and exclusive type recreation developments will be directed first towards private lands.

4. Appropriate laws and regulations will be invoked where necessary to protect the public's health, safety and welfare.

MINERALS

COOPERATE WITH LEGITIMATE MINERAL INTERESTS AND PROTECT RESOURCES FROM CIRCUMVENTION OF THE MINING LAWS.

1. Legitimate mineral activity is recognized as a form of resource use and will be harmonized with administration through cooperation with the miner.

2. Pending validity determinations, court injunctions will be sought to curtail mining activities on questionable claims where operations are resulting in damage to public lands.

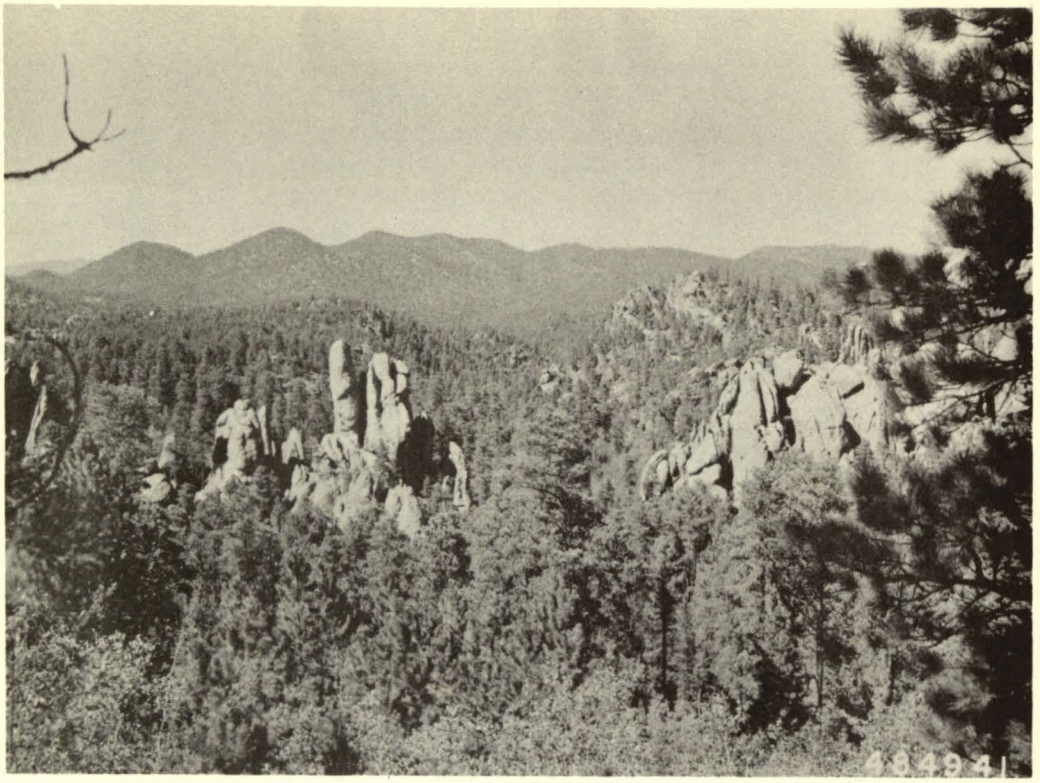
3. Stipulations in gas and oil leases needed for protection of national forest and Land Utilization lands involved will be recommended.

IV. MANAGEMENT ZONES

Zoning is used as a device in this guide for isolating or separating areas in the subregion for which management consideration, as regards priorities, objectives and direction should be different. A management zone may be defined as an area within which a controlling resource or use (sometimes more than one) can be isolated for inventory and analysis, for which specific controls may be set forth.

The management zones used in this subregion are: Hills, Plains, Travel Influence and Water Influence. Each zone is described and illustrated by a photograph. For each zone, management priorities, objectives, and directions are set forth. The management directions listed for each zone are directions which apply specifically to the zone. It should be remembered that the management directions in Chapter III are common to all management zones.

The Upper Pine Creek Natural Area is considered as a special area for management purposes.



Representative Illustrations

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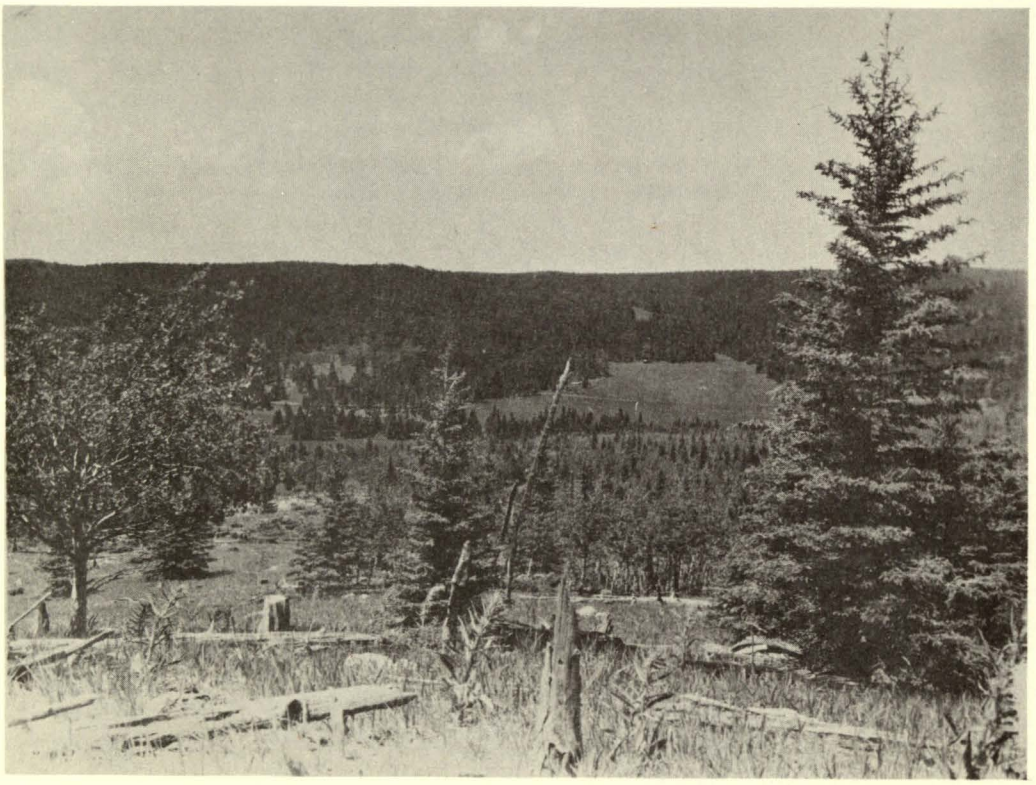
Hills Zone



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HILLS ZONE

The Hills Zone covers all national forest lands in the Black Hills except those lands contained within the Travel and Water Influence Zones.

The Black Hills uplift has created a mountainous area of important timber, mineral, and other resources. In contrast to the plains area, the Hills have a more temperate climate ranging to subhumid, providing for good forest cover and substantial permanent stream flows. The name Black Hills itself is derived from the color impression given by their dense cover of almost pure stands of ponderosa pine timber.

This zone is the meeting place of many eastern and western species of trees and shrubs and is the eastern limit of important commercial stands of ponderosa pine. It contains the bulk of the commercial timber lands of the subregion. Besides the pine, the only other commercially important tree is the white spruce which occurs to a limited extent along stream bottoms, north exposed canyon slopes, and occasionally in small areas of pure stands on the Limestone Plateau.

Lands within this zone are intensively used and as such should be intensively managed for all resources. Management priorities are difficult to establish for this most complex and diversified of the subregional zones. Broad priorities have been established but more clear-cut priorities, area by area, are established in the Block Multiple Use Plans. A major exception to the primary management priority in this zone is the Norbeck Wildlife Preserve where wildlife is of primary priority.

Now what priority is given to soil?

MANAGEMENT PRIORITY

Water and Timber - primary
Grazing and Wildlife - secondary

MANAGEMENT OBJECTIVES

1. To grow and harvest a maximum quantity and quality of timber on a sustained basis consistent with satisfactory water production.

2. To determine and use sound grazing capacities under good management practices for big game and wildlife.

MANAGEMENT DIRECTION

Timber

1. Regenerate unstocked, high quality timber sites as soon as possible.

2. Determine and manage for best use of low quality ponderosa pine sites.

3. Study spruce sites to determine the optimum product consistent with other resources.

4. Promote utilization of presently unmarketable materials.

5. Insect control on at least a maintenance basis will be incorporated in the forest program of management.

6. Epidemic insect infestations will be justification for temporary relinquishment of management plan controls.

7. Timber stand improvement practices will be used to the fullest extent possible to accelerate growth and improve quality of immature timber stands.

Water
= ?
= ^

Representative Illustration

of

Plains Zone

PLAINS ZONE

The Plains Zone covers all Land Utilization Project lands in the subregion except those tracts included in the Travel and Water Influence Zones.

With the exception of some foothills type timber in the breaks and small amounts of hardwood stands along some of the creeks and draws, the plains zone is largely covered with a grass type of vegetation. The zone is characterized by steeply rolling prairie or high plains land with areas of rough breaks adjacent to the major drainages. These breaks have frequent small bedlands areas where erosion is critical.

The length of growing season in this zone varies considerably from year to year, 140 to 150 days being about average. There is considerable danger of both late and early frosts making almost any season undependable. During dry years, the plains zone may have very limited, if any, precipitation for months at a time. The heavy soils typical of most of the zone produces no growth of grass under such conditions and no crops can be produced. Much of the Project lands have been converted from cultivation under private ownership to range lands under public administration.

Adjacent or intermingled private lands add to the complexities of administration and management. Some of these alienated lands are still cultivated which adds to the problem of stabilizing soils on Project lands.

MANAGEMENT PRIORITY

Grazing - primary
Wildlife and Recreation - secondary

MANAGEMENT OBJECTIVE

1. To maintain vegetative cover to prevent soil movement and to provide the opportunity to stabilize economic livestock units and furnish forage for game.

2. To develop areas suitable for recreation purposes.

MANAGEMENT DIRECTION

Range

1. Forage produced beyond the need for soil stabilization will be utilized by livestock.

2. Complete allotment action and management plans by 1961.

Lands

1. Land-for-land exchanges will be given high priority to block up public ownership.

2. The Badlands National Monument acquisition program will be completed as soon as possible.

Recreation

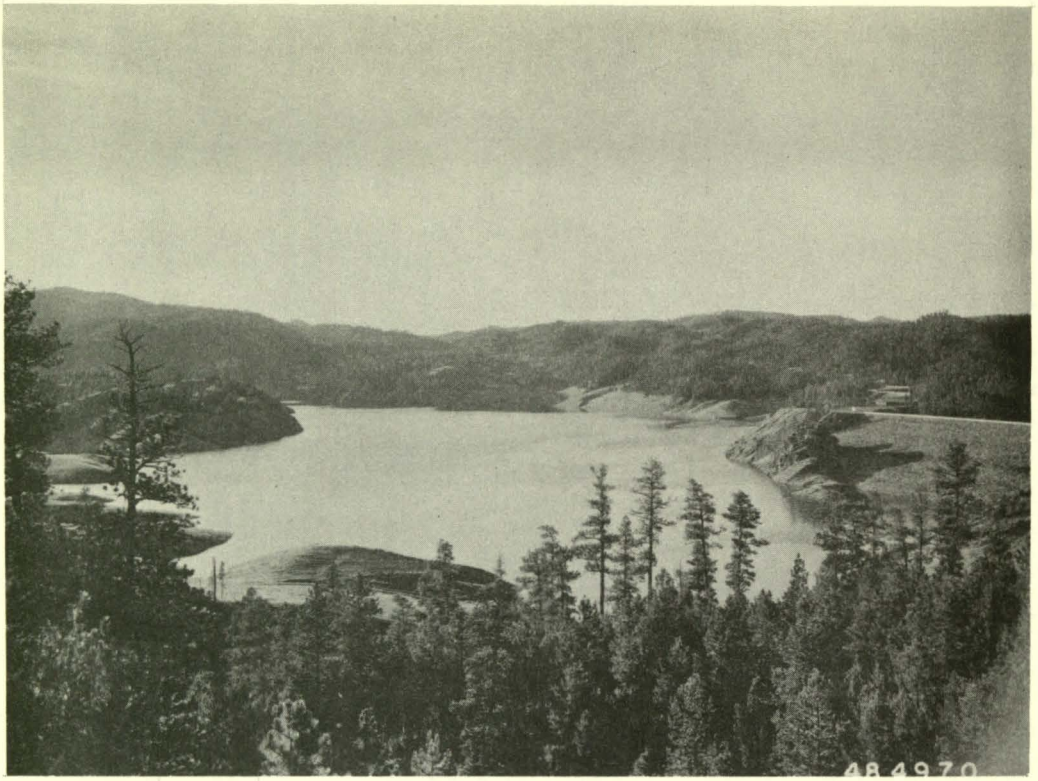
1. Desirable recreation sites will be developed to meet recreation needs.

Wildlife

1. Habitat needs of wildlife will be considered when planning and developing other uses and activities.

Water

1. Water impoundments will be installed to facilitate range and wildlife management and to provide soil stabilization.



Representative Illustrations

of

Water Influence Zone

WATER INFLUENCE ZONE

The Water Influence Zone is a zone encompassing selected National Forest or Land Utilization bodies of water and streams and public land areas around them requiring special management direction to protect and enhance the water values and to provide, in addition, for management of adjoining values related to the water bodies.

The width of the Water Influence Zone is variable in order to include the needs that arise in the following areas:

1. Stream banks and shores of water bodies.
2. Riparian vegetation.
3. Adjoining slopes.
4. Adjacent areas which can be used to draw certain types of occupancy, such as campgrounds, away from proximity to the water's edge.
5. Strips of trees and other vegetation that furnish background or scenic values.

MANAGEMENT PRIORITY

Water - primary
Recreation (including fishing) - secondary

MANAGEMENT OBJECTIVES

1. To give the protection to water needed to preserve its value as water for power, irrigation, domestic use, recreation, fishing, etc., which may be prescribed by law, regulation, permit or policy.

2. To provide the optimum recreation use.

MANAGEMENT DIRECTION

Water ?

Timber

1. Timber utilization will be in accordance with recreation timber policies and guides as established by the Chief's policy.

2. Complete slash abatement will be practiced in the waterfront zone and around recreation developments.

Range

1. Key areas and sites within the zone will be fenced to exclude livestock, if necessary.

Wildlife

1. Beaver management will be directed toward protection of riparian vegetation in the Waterfront Zone.

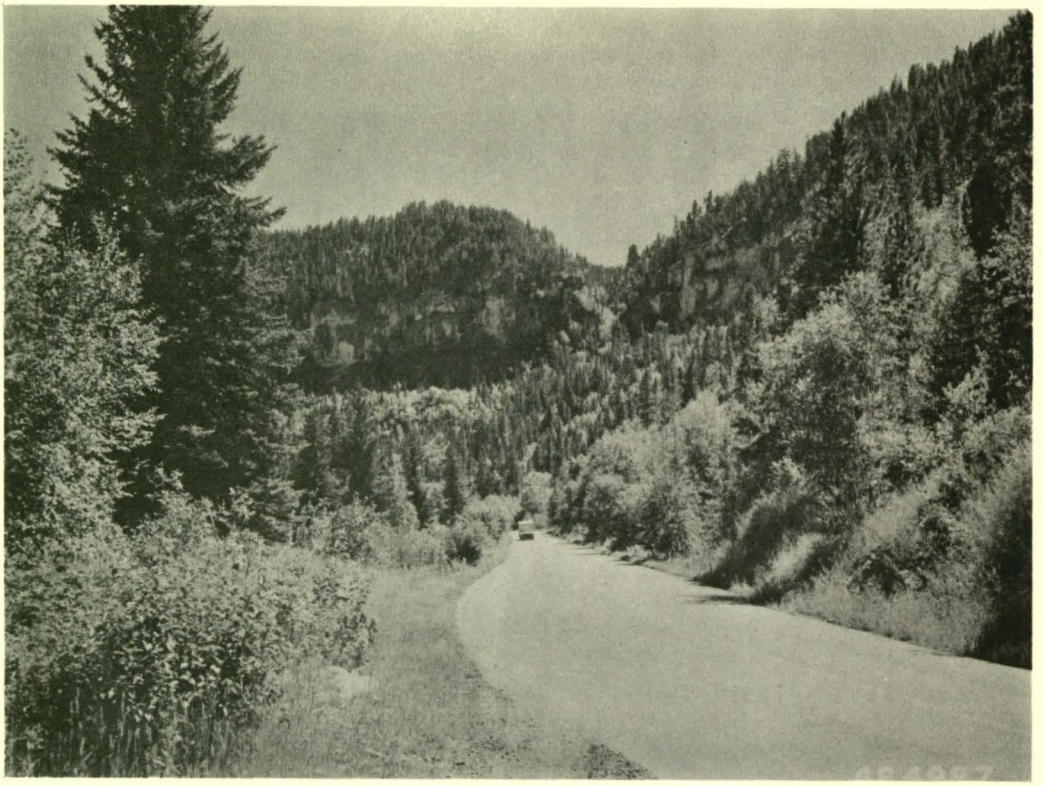
Special Land Uses

1. Special use residences will not be permitted in this zone and existing permits will be terminated as soon as feasible.

2. Commercial and service developments will be permitted only where the public need is well established and private land sites are not available.

Recreation

1. The waterfront zone, a definite well-described strip within the water influence zone, will be retained in its optimum condition, with a minimum of or no man-made structures, and to be used to the fullest extent possible for the free, unobstructed enjoyment of the general public.

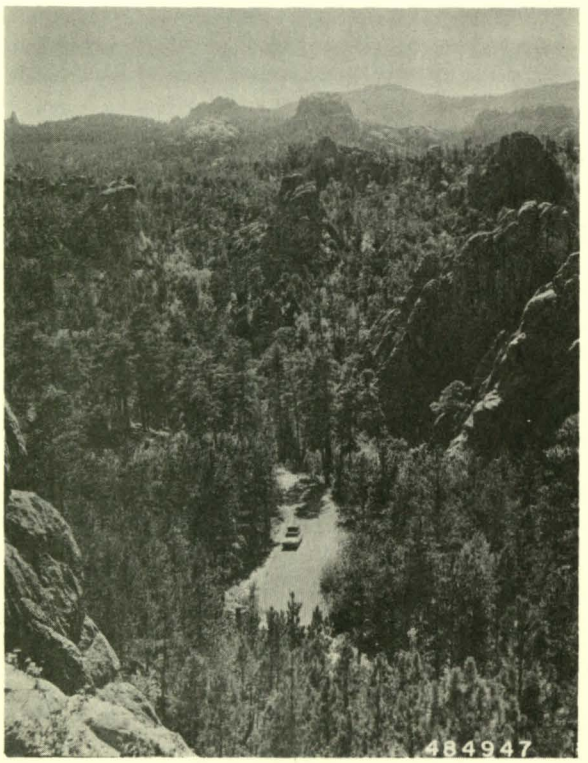


Representative Illustrations

of

Travel Influence

~~Roadside~~ Zone



TRAVEL INFLUENCE ZONE

The Travel Influence Zone is a zone established along selected highways or other significant routes of travel to define an area of national forest land on which the present or future highest use is primarily related to the effects of accessibility resulting from travel on highways and roads. It starts at the edge of the travel route right-of-way and includes the scenic strip where such exists.

Scenic strip designation is already required along Interstate, State, and Forest Highways and may be extended to other facilities in the transportation system. Management of the scenic strip will follow roadside zone policy set forth in the Manual.

The width of this zone may vary from a few hundred feet to a mile or more depending upon the aesthetics or physical characteristics of lands adjacent to the routes of travel. It includes the areas most suited for occupancy and use such as recreation sites, resorts, organization camps and residence groups.

The key characteristic of the zone is the volume and diversity of present and potential recreation value and services. It involves unusual problems and unusual opportunities in management. It is a critical area from the standpoint of continually being under the public's eye and involves some of the most tenuous and sensitive situations in national forest management.

MANAGEMENT PRIORITY

Recreation - primary
Other compatible uses - secondary

MANAGEMENT OBJECTIVES

1. Be sure that the important resources of the zone are fully considered, protected and intensively developed on the basis of highest relative value to meet the demands resulting from accessibility.

2. To use this zone as a demonstration "show window" area of "Multiple-Use in Action."

3. To concentrate recreation and public service developments in this zone - providing for multiple-use to extent possible.

MANAGEMENT DIRECTION

Special Land Uses

1. All uses in connection with road and highway maintenance such as gravel pits, stockpiling, and maintenance shops will be located away from the travel route perimeter to the extent possible.

Recreation

1. Work with road and highway agencies to provide roadside rest and point of interest parking areas for traveling public.

2. Special attention will be given to preserving the natural scene such as screening occupancy uses, harmonizing architecture, and color.

3. All road locations will include consideration for optimum development of public recreation within the travel influence zone including sites for campgrounds, trailer parking, picnic areas, winter sports, etc.

Fire

1. Maximum advantage of concentrations of people will be taken to intensify our fire prevention program as well as to better inform the public of other forest programs and activities.

Range

1. Range use will be adjusted or managed to avoid conflict with recreation and other occupancy uses.

2. Key areas within the zone will be fenced to exclude livestock.

Lands

1. Priority will be given to survey and posting of interior and exterior national forest boundaries within this zone.

2. An inventory of rights-of-way needs will be made and an aggressive action program set up to obtain those needed.

Timber

1. Timber will be harvested in such a manner and to a degree that will be compatible with and will enhance recreation values and "show windows" along our roads.

SPECIAL AREA

The Upper Pine Creek Natural Area is an area of national-forest land that has been set aside as a special zone because of the values of special significance within its boundaries. Management of the area should be in accordance with the policies set forth in the Master Plan of the Norbeck Wildlife Preserve with special attention to keeping the tract in its primitive condition.

MANAGEMENT PRIORITY

Research and investigation - primary

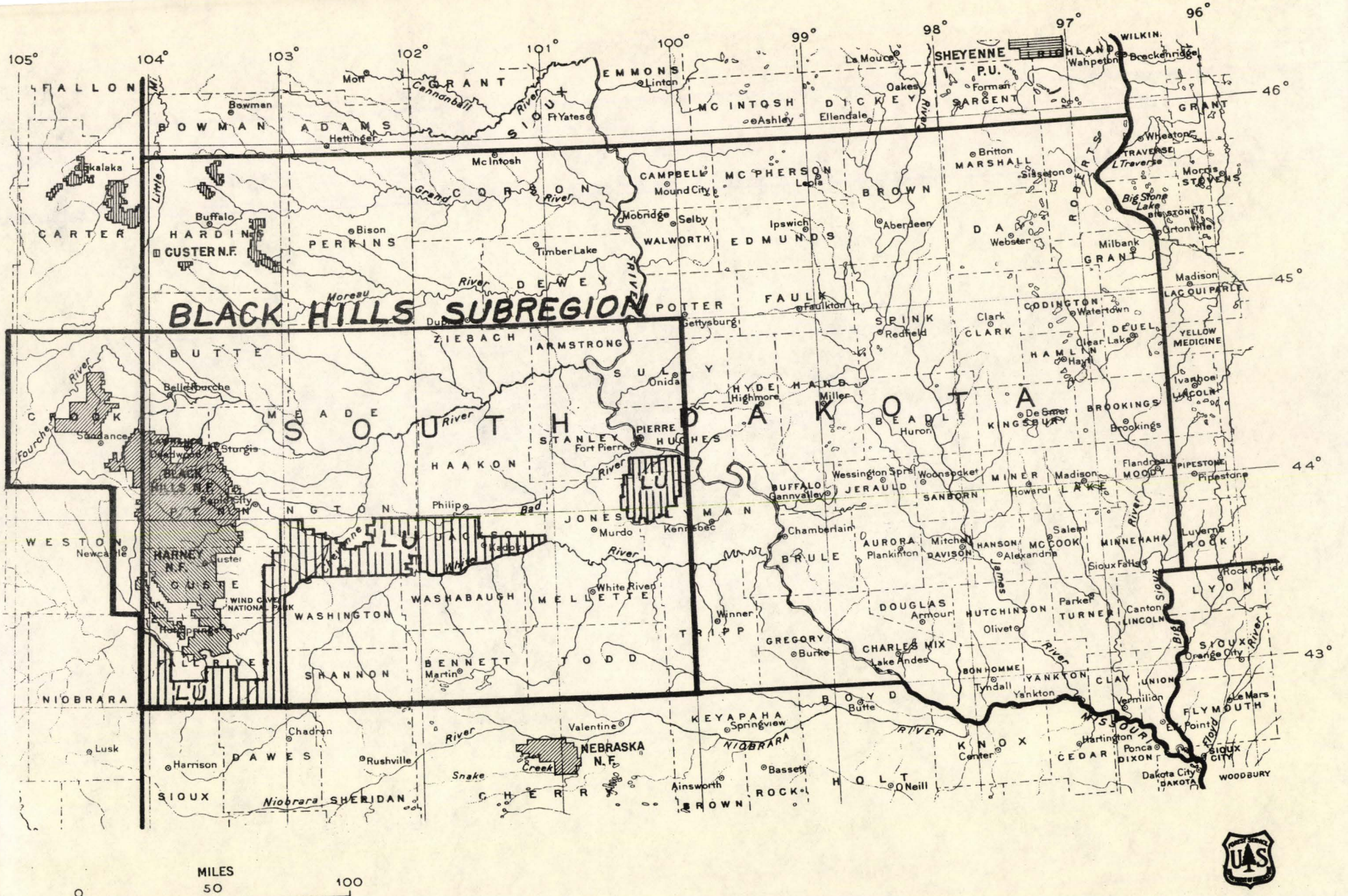
MANAGEMENT OBJECTIVE

To preserve a virgin area which will serve for comparison with adjacent lands where timber is cut and livestock are grazed.

MANAGEMENT DIRECTION

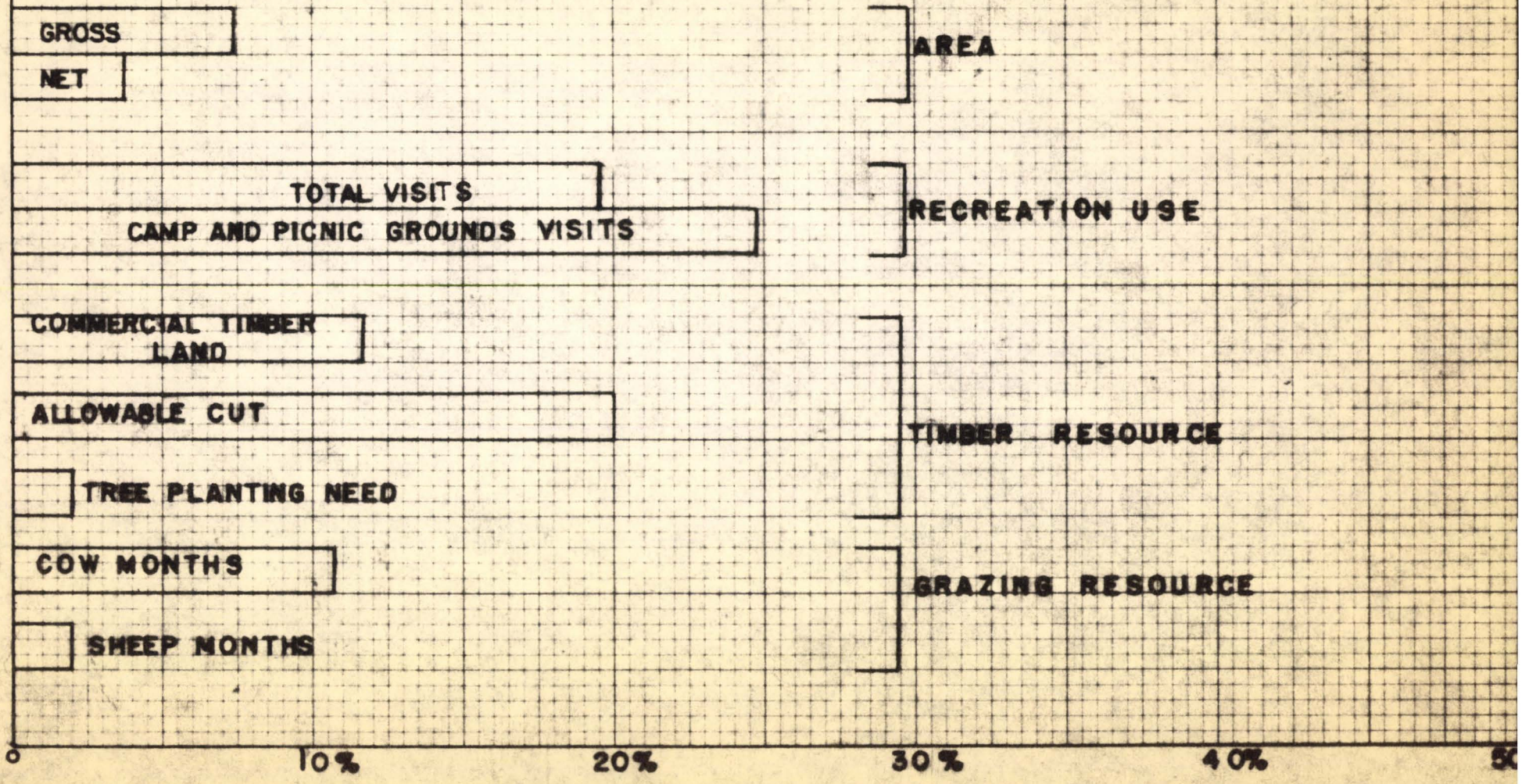
1. The area will be allowed to remain in virgin status with uses other than for wildlife purposes or research needs prohibited.

APPENDIX

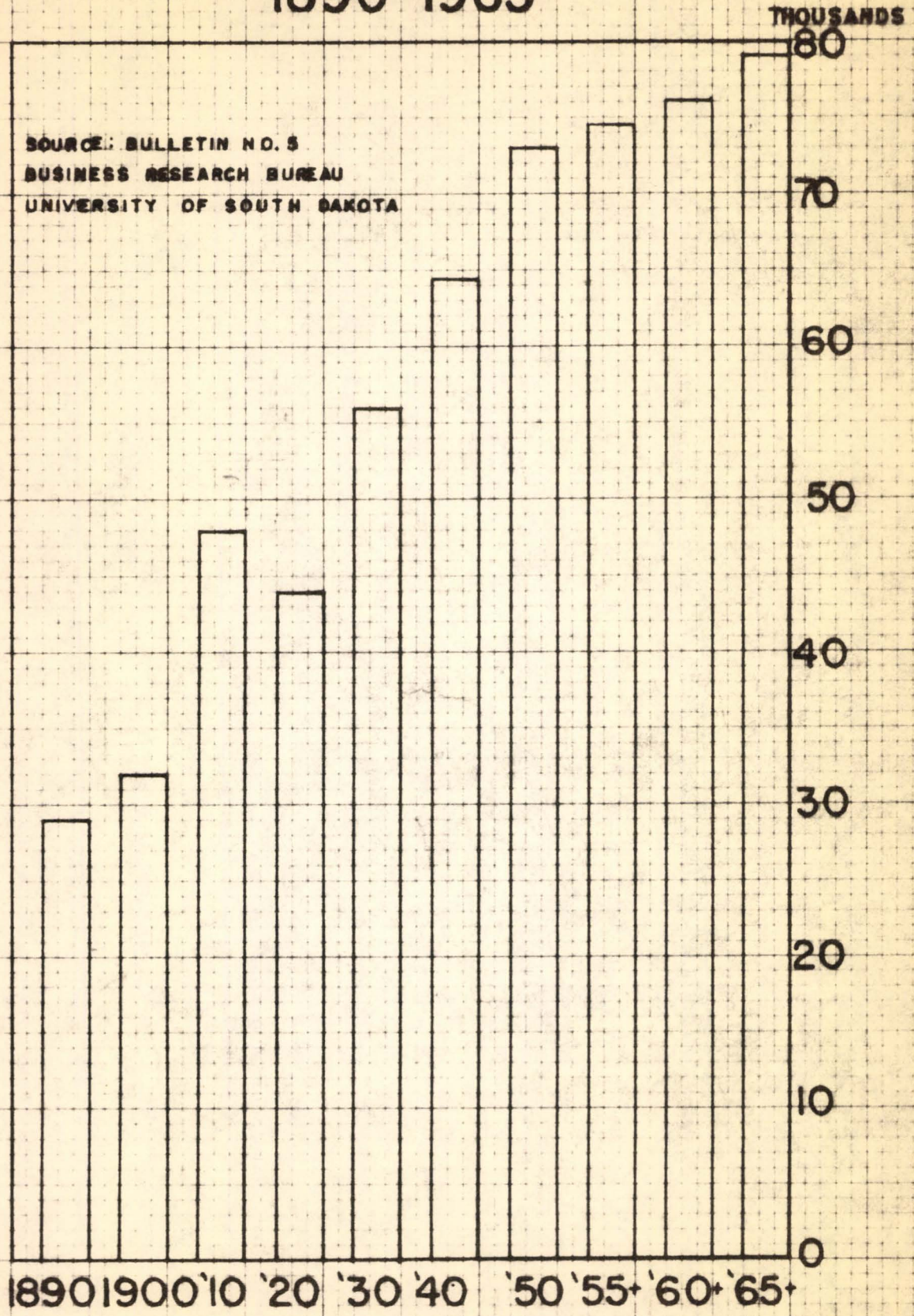

BLACK HILLS SUBREGION
SOUTH DAKOTA
105°
104°
103°
102°
101°
100°
99°
98°
97°
96°
46°
45°
44°
43°
FALLON
CARTER
BOWMAN
ADAMS
HARDING
PERKINS
CUSTER N.F.
GRANT
EMMONS
MC INTOSH
DICKEY
SHEYENNE R.
SARGENT
WILKIN
RICHLAND
TRAVERSE
GRANT
STEVENS
CORSON
CAMPBELL
MC PHERSON
BROWN
MARSHALL
ROBERTS
DAY
CLARK
CODINGTON
HAMLIN
DEUEL
GRANT
LAC QUI PARLE
YELLOW MEDICINE
LINCOLN
BROOKINGS
MOODY
PIPESTONE
LUCAS
MINER
JERAULD
SANBORN
BUFFALO
BEADLE
KINGSBURY
HYDE
HAND
HUGHES
STANLEY
SULLY
POTTER
FAULK
DEWEY
ZIEBACH
ARMSTRONG
BUTTE
MEADE
HAAKON
JONES
LYMAN
BRULE
AURORA
DAVISON
HANSON
MC COOK
MINNEHAHA
LAKE
MOODY
LYON
ROCK
JACKSON
PENNINGTON
CUSTER
FALL RIVER
HARNEY N.F.
BLACK HILLS N.F.
WIND CAVE NATIONAL PARK
WASHABAUGH
MELLETTE
WHITE RIVER
TRIPP
GREGORY
CHARLES MIX
DOUGLAS
HUTCHINSON
TURNER
LINCOLN
UNION
CLAY
YANKTON
BON HOMME
TODD
SHANNON
BENNETT
WESTON
NIOBRARA
KEYAPAHA
BOYD
KNOX
CEDAR
DIXON
DAKOTA
WOODBURY
FLOYD
SIOUX CITY
DAWES
SIOUX
SHERIDAN
CHERRY
BROWN
ROCK
HOLT
NEBRASKA N.F.
Moreau River
Grand River
Cannonball River
Little Missouri River
Cheyenne River
Bad River
White River
Niobrara River
Snake Creek
Fall River
Fourche River
Big Sioux River
James River
Missouri River
Big Stone Lake
L. Traverse
Lake Andes
Lake Oahe
Mobridge
Selby
Ipswich
Aberdeen
Webster
Milbank
Watertown
Clear Lake
Redfield
Gettysburg
Faulkton
Onida
Highmore
Miller
Huron
Brookings
De Smet
Ivanhoe
Madison
Howard
Wessington Springs
Woonsocket
Chamberlain
Plankinton
Mitchell
Alexandria
Salem
Sioux Falls
Rock Rapids
Luverne
Pipestone
Flandreau
Canton
Parker
Yankton
Vermillion
Tyndall
Armour
Olivet
Burke
Winner
Martin
White River
Murdo
Kennebec
Philip
Wall
Interior
Kadoka
Hot Springs
Custer
Rapid City
Sturgis
Deadwood
Lead
Belle Fourche
Sundance
Newcastle
Hettinger
Bowman
Mott
Linton
La Moure
Oakes
Forman
Ellendale
Ashley
Wahpeton
Breckenridge
Wheaton
Ortonville
Big Stone City
Britton
Sisseton
Leola
Mound City
Timber Lake
Buffalo
Bison
McIntosh
Fort Yates
Valentine
Chadron
Harrison
Rushville
Lusk
Ainsworth
Bassett
O'Neill
Springview
Butte
Hartington
Ponca
Center
Dakota City
Le Mars
Orange City
Rock Rapids
Faulkton
Gettysburg
Fort Pierre
Pierre
Oahe Dam
Big Bend Dam
Fort Randall Dam
Gavins Point Dam
Lewis and Clark Lake
Lake Francis Case
Lake Sharpe
Lake Oahe
Missouri River
Big Sioux River
James River
Niobrara River
Fall River
Cheyenne River
Bad River
White River
Moreau River
Grand River
Cannonball River
Little Missouri River
Fourche River
Snake Creek
Big Stone Lake
L. Traverse
Lake Andes
Lake Oahe
MILES
0
50
100
1939
GPO 832532
BASE BY U.S.G.S.

SOME RESOURCE RELATIONSHIPS ON THE BLACK HILLS NATIONAL FOREST AS A PERCENTAGE OF REGION 2

(OBTAINED FROM 1958 STATISTICAL REPORTS)

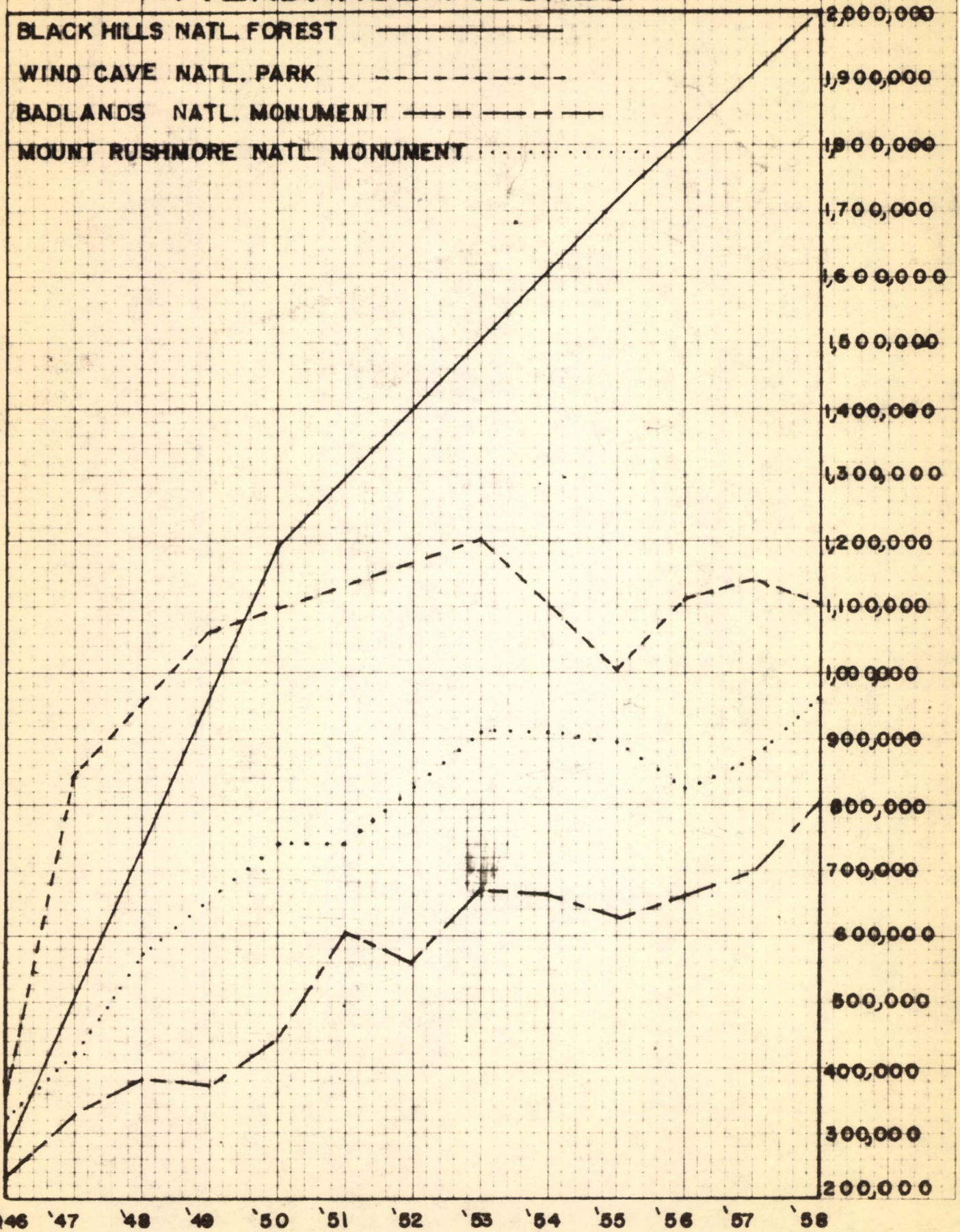


POPULATION OF BLACK HILLS REGION 1890-1965

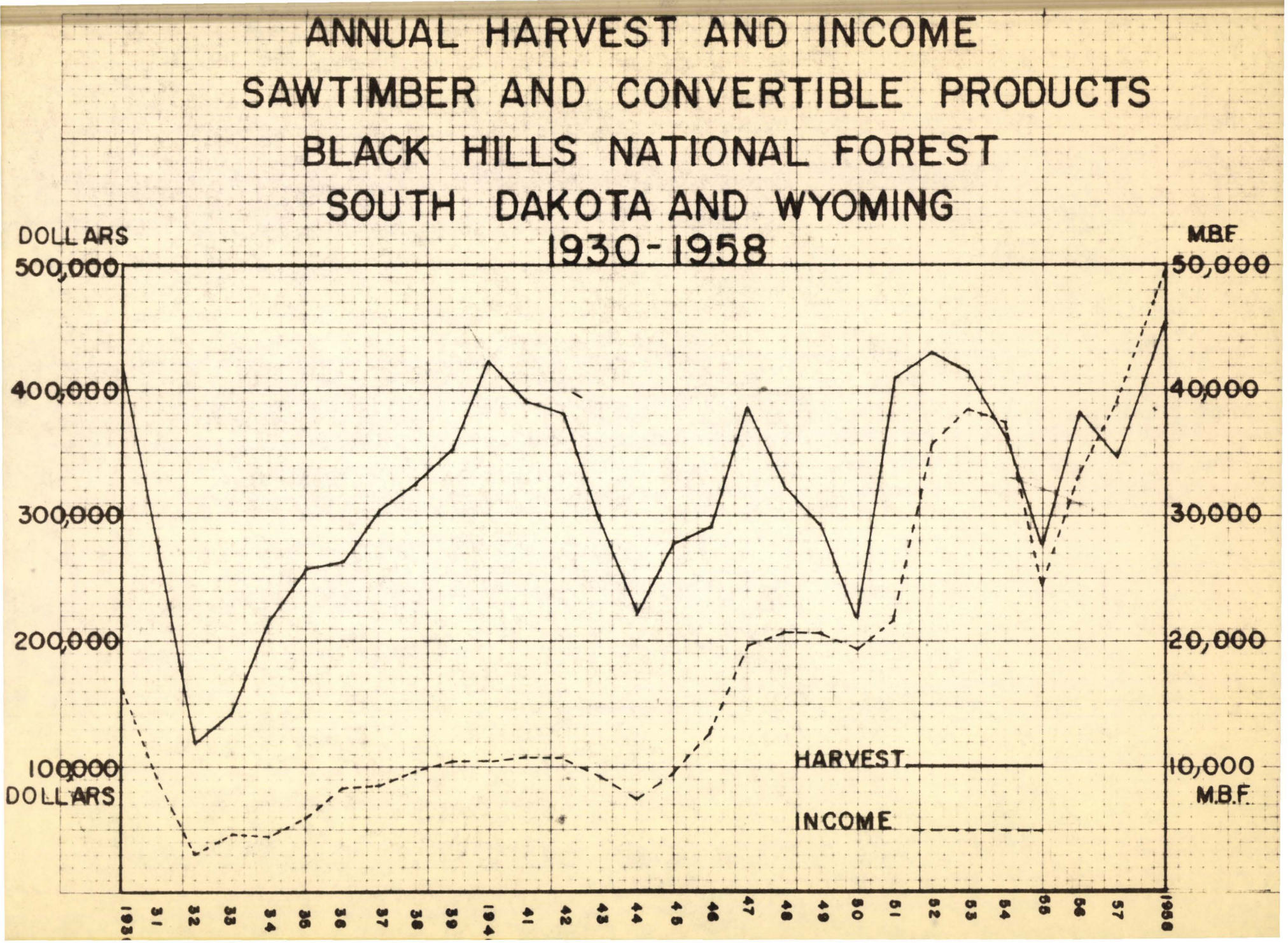


SOURCE: BULLETIN NO. 5
BUSINESS RESEARCH BUREAU
UNIVERSITY OF SOUTH DAKOTA

BLACK HILLS AND BADLANDS AREA ATTENDANCE FIGURES

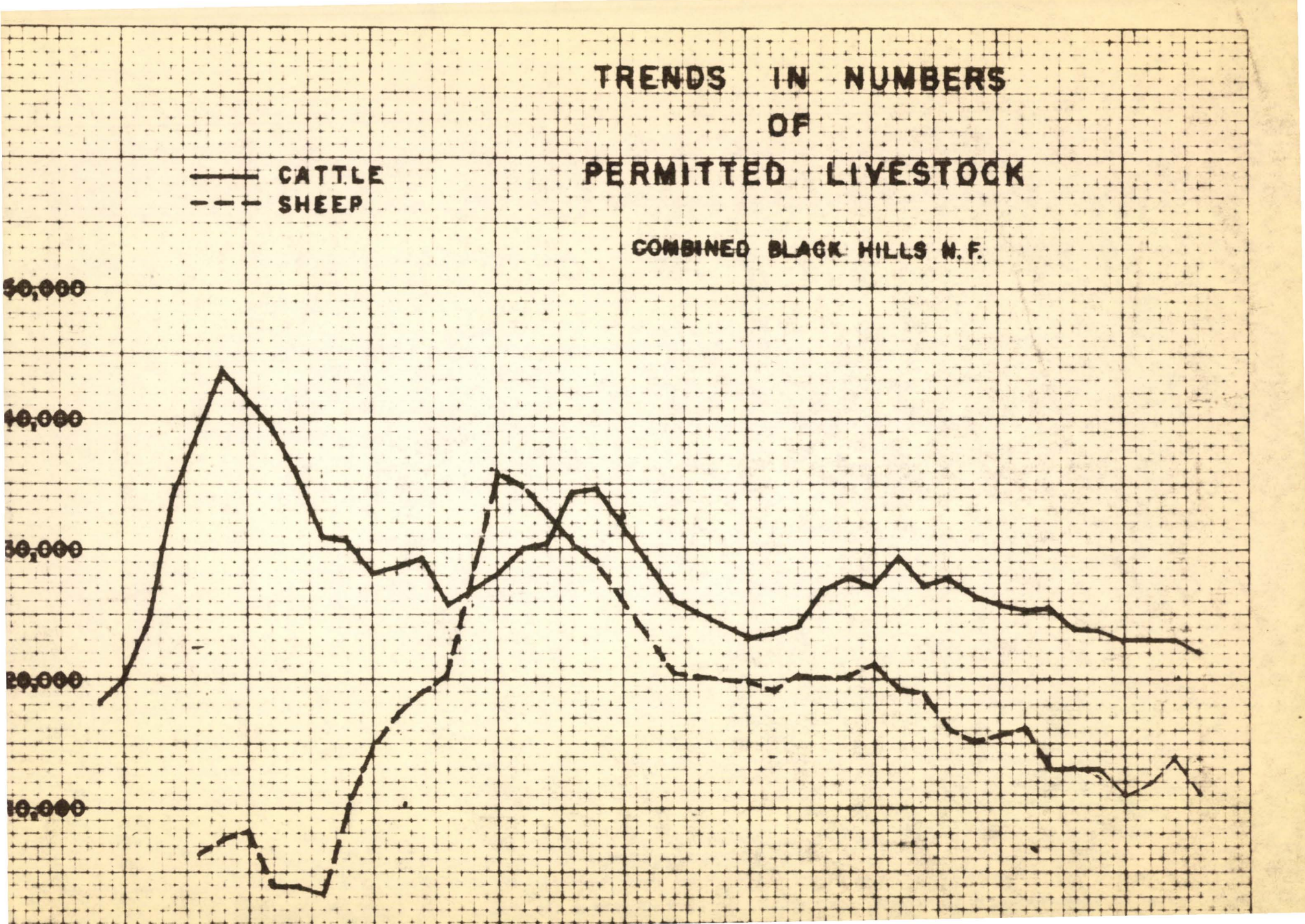


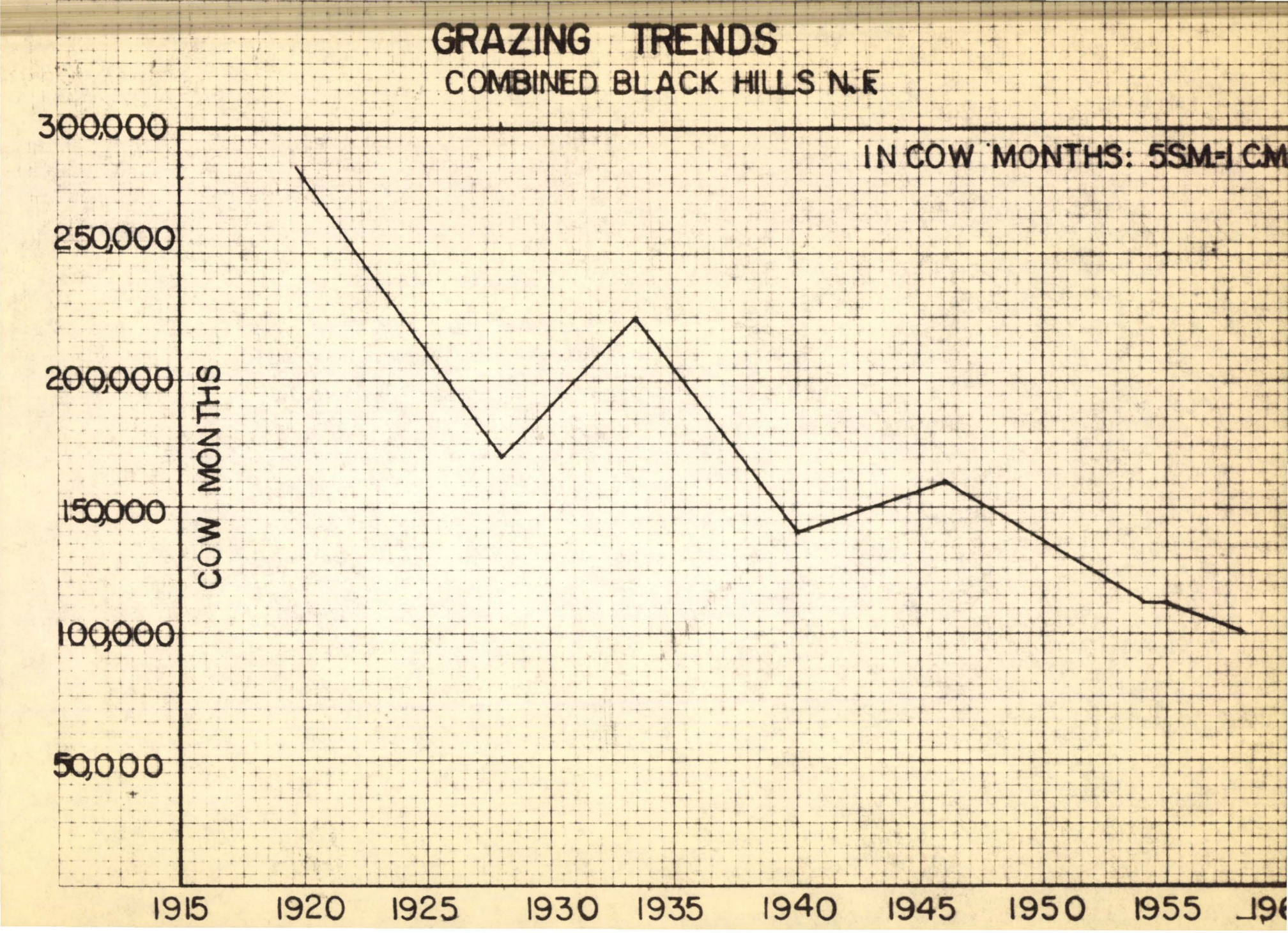
ANNUAL HARVEST AND INCOME
SAWTIMBER AND CONVERTIBLE PRODUCTS
BLACK HILLS NATIONAL FOREST
SOUTH DAKOTA AND WYOMING
1930-1958



TRENDS IN NUMBERS OF PERMITTED LIVESTOCK

COMBINED BLACK HILLS N.F.




GRAZING TRENDS
COMBINED BLACK HILLS N.F.
IN COW MONTHS: 5SM=1 CM
300,000
250,000
200,000
150,000
100,000
50,000
COW MONTHS
1915
1920
1925
1930
1935
1940
1945
1950
1955

ANNUAL FIRE OCCURRENCE
BLACK HILLS NATIONAL FOREST
1950-1958